FAA-E-2167
December 9, 1964

FEDERAL AVIATION AGENCY SPECIFICATION

BASE, STANDARD FOR INSET LIGHTS, DEEP INSET TYPE

1. SCOPE

1.1 Scope.- The equipment covered by this specification is a standard metal base designed to accommodate an inset light in paved areas for airport lighting systems. The standard base shall consist of a cover flange, cylindrical body and bottom plate.

2. APPLICABLE SPECIFICATIONS, STANDARDS, AND OTHER PUBLICATIONS

2.1 Documents.- The following documents of the issues in effect on date of invitation for bids or requests for proposals form a part of this specification, to the extent specified herein.

2.1.1 Military specifications

MIL-R-5847C	Rubber, Silicone, High and Low Temperature Resistant
MIL-P-26915A (USAF)	Primer Coating, Zinc Dust Pigmented, For Steel Surfaces

2.1.2 Federal specifications

QQ-Z-325a	Zinc Coating, Electrodeposited Requirements For
QQ-P-416a	Plating, Cadmium (Electrodeposited)

2.1.3 Military standard

MIL-STD-10A	Surface Roughness Waviness and Lay

2.1.4 Other publication

ASTM A 36 Structural Steel

3. REQUIREMENTS

3.1 Size.- The base shall be built in one size as shown on Figure 1.

3.2 Environmental conditions.- The base shall be built for underground service in airport pavement where it will be subjected to the weight, vibration and impact loads of landing aircraft, vehicular traffic and the highly corrosive conditions incident to installation in the airport pavement.

3.3 Component parts.- The base shall consist of a cover flange, cylindrical body and bottom plate. Each of these parts shall be fabricated from structural steel complying with Specification ASTM A 36.

3.3.1 Cover flange.- The cover flange shall be continuously welded to the cylindrical body with a seal weld on the outside and a fillet weld on the inside of the joint. The top face and inside edge of the flange shall be machine finished. Six (6) blind holes, 5/8 inch deep and threaded at least 1/2 inch, shall be provided in the top face. After the protective plating has been applied, the flange shall conform to the requirements shown on Figure 1. Further, the top surface of the flange shall lie between two (2) parallel planes 0.010 inches apart which are perpendicular to the axis of the cylindrical body. Surface finishes shall be determined as roughness height ratings in micro-inches in accordance with Military Standard MIL-STD-10A. The effect of flaws shall be included in the roughness height measurements.

3.3.2 Cylindrical body.- The cylinder constituting the body of the base shall be formed from one continuous plate and shall contain one continuous vertical weld. Two (2) wire entrance holes shall be provided. The inside and outside edges of these holes shall be rounded to a radius of approximately 0.005 inch and shall contain no burrs or sharp edges. The body shall conform to the requirements shown on Figure 1.

3.3.3 Bottom plate.- The bottom plate shall be fitted inside of and continuously welded to the cylindrical body. The bottom plate shall conform to the requirements shown on Figure 1.

3.3.4 Welding.- All welding cited in this specification shall consist of continuous, watertight welds and shall conform to the requirements shown on Figure 1.

3.3.5 Protective plating.- After fabrication, machining and drilling, the entire base shall be plated for corrosion protection. This plating shall be zinc complying with Class 1, Type I of Federal Specification QQ-Z-325a or cadmium conforming to Class 1, Type 1 of Federal Specification QQ-P-416a. The plating shall be applied as required by the applicable specification.

3.3.6 Protective painting.- After the protective plating has been applied, all inside surfaces, including the underside of the cover flange, shall be painted for additional corrosion protection. This painting shall comply with Military Specification MIL-P-26915A.

3.3.7 "O" ring gasket.- One (1) "O" ring gasket suitable for use in the "O" ring groove in the cover flange shall be furnished with each base. This gasket shall be molded from silicone rubber complying with Class 2, Grade 60 of Military Specification MIL-R-5847C and shall conform to the requirements shown on Figure 1.

3.3.8 Bolts and washers.- Six (6) hex head bolts 3/8 inch in diameter, 3/4 inch in length and suitable for use in the threaded holes in the flange shall be furnished with each base. In addition six (6) 3/8 inch internal tooth lock washers shall be furnished with each base. Both the bolts and lock washers shall be fabricated from 18-8 stainless steel.

3.3.9 Plywood cover.- One (1) 3/4 inch plywood cover 9 15/16 inches (+ 0 inch, -1/8 inch) in diameter containing six (6) mounting holes corresponding to the threaded holes in the cover flange shall be furnished with each base. These holes shall be 7/16 inch in diameter and shall be counter-bored on the top surface 1 1/8 inch in diameter and 1/4 inch deep. The cover shall be fabricated from commercial Grade C-D, 5-ply plywood; and Grade C shall be installed on the outside. The top of each cover shall contain a reference line stenciled in orange which indicates the light axis.

3.3.10 Hole plugs.- Two (2) plugs suitable for insertion in the wire entrance holes shall be furnished with each base. They shall be fabricated from polyethylene and be similar to 1/2 inch pipe thread protectors. During installation these plugs may be punctured to provide an entrance for electrical connections.

3.3.11 Paper gasket.- One (1) gasket containing six (6) bolt holes and suitable for use as a seal between the plywood cover and the base flange shall be furnished with each base. It shall be fabricated from chipwood having a minimum thickness of 0.050 inch.

4. INSPECTION, TEST AND CERTIFICATION

4.1 Inspection.- Each complete base assembly shall be inspected at the contractor's plant, by a representative of the contracting officer, for complete conformance with the requirements of this specification.

4.2 Test.- Each complete base assembly shall be subjected to the watertight and load tests and one base assembly, selected on a random basis, out of every one-hundred procured on any one contract shall be subjected to the plating and painting tests to determine compliance with the requirements of this specification.

4.2.1 Watertight test.- A steel cover shall be fabricated from structural steel complying with Specification ASTM A 36. This cover shall have an outside diameter of 7 15/16 inch (+0 inch, -1/16 inch), shall have a minimum thickness of 3/4 inch and shall contain six (6) 7/16 inch diameter holes corresponding to the threaded holes in the cover flange. On top of the steel cover the six (6) bolt holes shall be counter-bored so that the bolt heads do not protrude above the top surface of the cover when the bolts and lock washers are in place and tightened. The area of the underside of the cover which fits on the base flange, shall be machine finished to a tolerance of flatness of 0.010 inch. The wire entrance holes in the base shall be adequately sealed, an "O" ring gasket shall be inserted in the gasket groove in the base flange, the steel cover shall be attached to the base flange with six (6) hex head bolts and six (6) lock washers, and the bolts shall be torqued to 150±10 inch-pounds. A suitable conduit nipple with a tee fitting shall be screwed into a tapped hole in the steel cover. One side of the fitting shall be attached to a compressed air source, and an air pressure gauge shall be attached to the other side of the tee. With a minimum internal pressure of 10 psi the assembled unit shall be tested using an approved bubble test material (high foam detergent producing a low surface tension). The base shall be considered watertight if no air bubbles are noted.

4.2.2 Protective plating test.- Zinc plating shall be tested by the appropriate method described in Federal Specification QQ-Z-325a. Cadmium plating shall be tested by the appropriate method described in Federal Specification QQ-P-416a.

4.2.3 Protective painting test.- The painting shall be tested by the appropriate method described in Military Specification MIL-P-26915A.

4.2.4 Load test.- The base, "O" ring gasket, steel cover and bolts and washers shall be assembled as described in Section 4.2.1, and the assembled unit shall be placed on a flat steel plate mounted in a standard load testing machine. This test mounting shall simulate an actual installation. The load shall be applied through a block of rubber, 10 inches in diameter, 1 inch thick and having a Shore A hardness of 55 to 70. A total load of 35,000 pounds shall be applied uniformly over the area of the rubber block at a rate of not more than 10,000 pounds per minute. The base shall be considered unsatisfactory if there is any permanent deformation, cracking of material, or damage to any part of the base.

4.3 Certification.- The manufacturer shall provide certification for the following items:

(a) That the steel used to fabricate the cover flange, the cylindrical body and the bottom plate of the base complies with the requirements of ASTM A 36.

(b) That the silicone rubber used to mold the "O" ring gasket furnished with each base complies with the requirements MIL-R-5847C.

(c) That the steel used to fabricate the bolts and lock washers complies with the requirements of 18-8 stainless steel.

5. PREPARATION FOR DELIVERY

5.1 Cleaning.- Prior to packaging the base shall be thoroughly cleaned of all oil film, grease and other foreign material. A clean surface is required to assure a good bond of the base with the epoxy used during installation.

5.2 Package assembly.- Each base shall be assembled and prepared for delivery as required in the following sub-paragraphs.

5.2.1 Hole plugs.- Two (2) hole plugs, described in Section 3.3.10, shall be inserted into the two (2) wire entrance holes in the base.

5.2.2 "O" ring gasket and lock washers.- The "O" ring gasket and lock washers, described in Sections 3.3.7 and 3.3.8 respectively, shall be placed in separate containers and placed inside of the base.

5.2.3 Base cover.- The plywood cover and the paper gasket, described in Sections 3.3.9 and 3.3.11 respectively, shall be attached to the base cover flange with the bolts described in Section 3.3.8. The wood cover and paper gasket shall form a seal which will prevent epoxy from reaching the top face of the base flange during installation.

5.2.4 Marking.- The plywood cover of each base shall be durably and legibly marked with the following:

Base, Standard for Inset Lights
FAA-E-2167
FAA Contract No._____
Manufacturers Name and Part No._____

6. NOTES

6.1 None.

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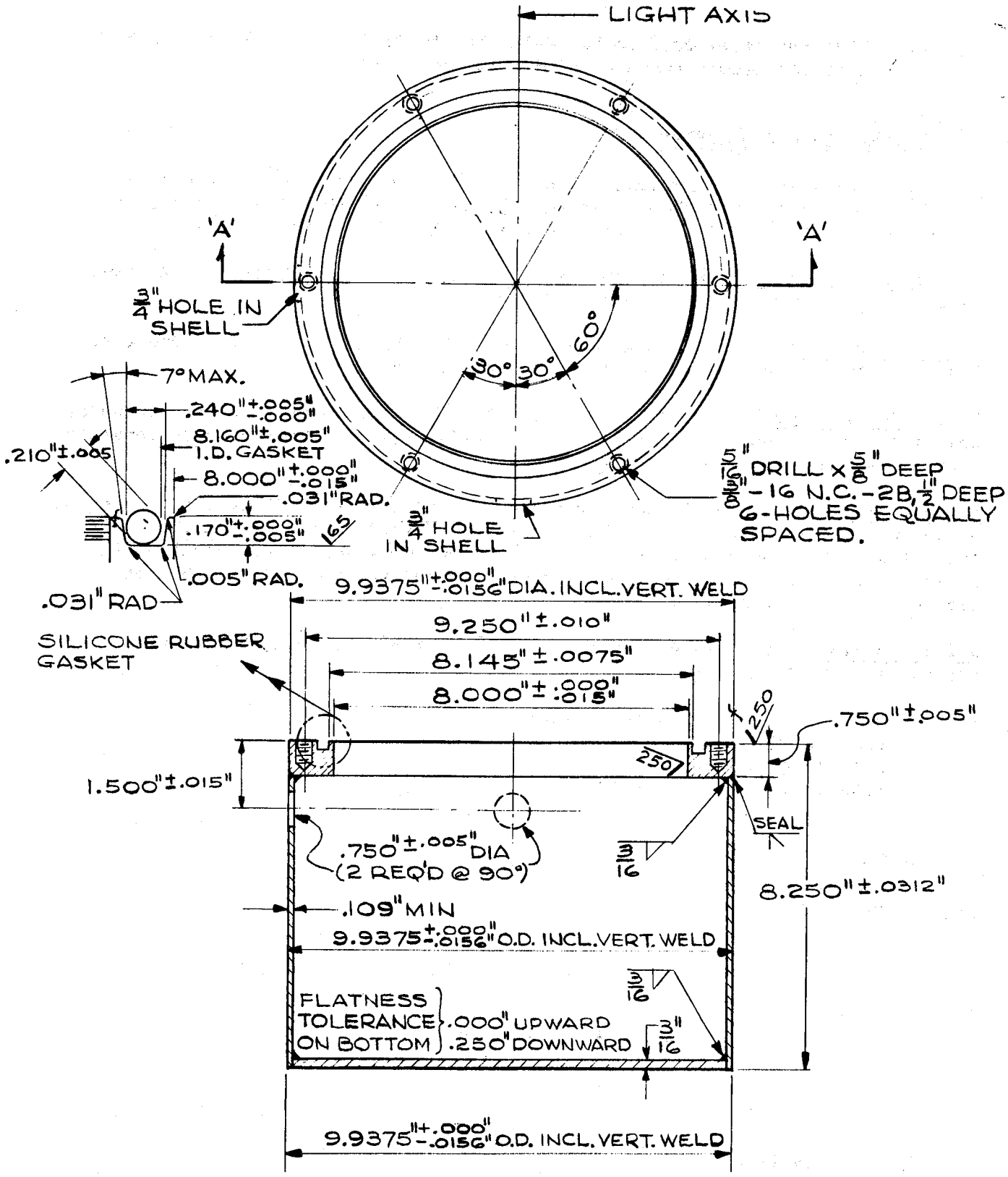
For Figure 1 see Page 6.



SECTION 'A' - 'A'

STANDARD BASE FOR INSET LIGHTS

Figure 1

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